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<120> ANTI-CD38 HUMAN ANTIBODIES AND USES THEREFOR

<130> 00361-8035.US00

<140> US 10/588,568

<141> 2006-08-04

<150> 60/541,911

<151> 2004-02-06

<150> 60/547,584

<151> 2004-02-26

<150> 60/553,943

<151> 2004-03-18

<150> 60/599,014

<151> 2004-08-06

<150> 60/614,471

<151> 2004-10-01

<160> 43

<170> PatentIn Ver. 3.3

<210> 1

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<212> DNA

<213> Homo sapiens

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gcgcagaagt	ttcagggccg	ggtgaccatg	accggtgata	ccagcattag	caccgcgtat	240
atggaactga	gcagccctgc	tagcgaagat	acggccgtgt	attattgccc	gcgtgagtat	300
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<212> DNA

<213> Homo sapiens

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cctgggaagg	gtctcgaagt	ggtgagcaat	atccgttctg	atggtagctg	gacctattat	180
gcgatagcg	tgaaaggccg	ttttaccatt	tcacgtgata	attcgaaaaa	caccctgtat	240
ctgcaaatga	acagccctgc	tgcggaagat	acggccgtgt	attattgccc	gcgtcgttat	300
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<210> 3

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<212> DNA

<213> Homo sapiens

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cgggataagc tgaaaggccg ttttaccatt tcacgtgata attcgaaaaa caccctgtat 240
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<210> 4
<211> 357
<212> DNA
<213> Homo sapiens

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<210> 5
<211> 121
<212> PRT
<213> Homo sapiens

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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30
Ser Ile Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Tyr Ile Asp Pro Asn Arg Gly Asn Thr Asn Tyr Ala Gln Lys Phe
50 55 60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Glu Tyr Ile Tyr Phe Ile His Gly Met Leu Asp Phe Trp Gly
100 105 110
Gln Gly Thr Leu Val Thr Val Ser Ser
115 120

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<210> 6
<211> 122
<212> PRT
<213> Homo sapiens

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<400> 6
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 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Asn Ile Arg Ser Asp Gly Ser Trp Thr Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Arg Tyr Trp Ser Lys Ser His Ala Ser Val Thr Asp Tyr Trp
 100 105 110
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 7
 <211> 122
 <212> PRT
 <213> Homo sapiens

<400> 7
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 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ser Asn Ile Tyr Ser Asp Gly Ser Asn Thr Phe Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Asn Met Tyr Arg Trp Pro Phe His Tyr Phe Phe Asp Tyr Trp
 100 105 110
 Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 8
 <211> 119
 <212> PRT
 <213> Homo sapiens

<400> 8
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<211> 327
 <212> DNA
 <213> Homo sapiens

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 caggcgccag ttcttgtgat ttatcgtgat aatgatcgtc cctcaggcat cccggaacgc 180
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 ggcacgaagt taaccgttct tggccag 327

<210> 13
 <211> 114
 <212> PRT
 <213> Homo sapiens

<400> 13
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 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu Phe Ile
 20 25 30
 Asp Gly Asn Asn Tyr Leu Asn Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln Tyr
 85 90 95
 Ser Ser Lys Ser Ala Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105 110
 Arg Thr

<210> 14
 <211> 109
 <212> PRT
 <213> Homo sapiens

<400> 14
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Ser Ala Phe
 20 25 30
 Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Lys Val Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln Ala Tyr Ser Gly Ser Ile
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr
100 105

<210> 15
<211> 108
<212> PRT
<213> Homo sapiens

<400> 15
Asp Ile Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Ser Cys Ser Gly Asp Asn Ile Gly Asn Lys Tyr Val
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Val Ile Tyr
35 40 45

Gly Asp Asn Asn Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Asp Ser Ser Tyr Phe Val
85 90 95

Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
100 105

<210> 16
<211> 109
<212> PRT
<213> Homo sapiens

<400> 16
Asp Ile Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
1 5 10 15

Thr Ala Arg Ile Ser Cys Ser Gly Asp Asn Ile Gly His Tyr Tyr Ala
20 25 30

Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
35 40 45

Arg Asp Asn Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
50 55 60

Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
65 70 75 80

Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Leu His Asp Phe
85 90 95

Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly Gln
100 105

<210> 17
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 17
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30
Tyr Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Gln Lys Phe
50 55 60
Gln Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Ser Thr Ala Tyr
65 70 75 80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln
100 105 110
Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 18
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
consensus sequence

<400> 18
Gln Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45
Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln

100 105 110

Gly Thr Leu Val Thr Val Ser Ser
115 120

<210> 19
 <211> 107
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 consensus sequence

<400> 19
 Ser Tyr Glu Leu Thr Gln Pro Pro Ser Val Ser Val Ala Pro Gly Gln
 1 5 10 15
 Thr Ala Arg Ile Ser Cys Ser Gly Asp Ala Leu Gly Asp Lys Tyr Ala
 20 25 30
 Ser Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Val Leu Val Ile Tyr
 35 40 45
 Asp Asp Ser Asp Arg Pro Ser Gly Ile Pro Glu Arg Phe Ser Gly Ser
 50 55 60
 Asn Ser Gly Asn Thr Ala Thr Leu Thr Ile Ser Gly Thr Gln Ala Glu
 65 70 75 80
 Asp Glu Ala Asp Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro Val
 85 90 95
 Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
 100 105

<210> 20
 <211> 108
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 consensus sequence

<400> 20
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Tyr
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro

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Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg			
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<210> 21
 <211> 113
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic consensus sequence

<400> 21
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 1 5 10 15
 Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
 20 25 30
 Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45
 Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln His
 85 90 95
 Tyr Thr Thr Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105 110

Arg

<210> 22
 <211> 300
 <212> PRT
 <213> Homo sapiens

<400> 22
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 1 5 10 15
 Arg Leu Ser Arg Arg Ala Gln Leu Cys Leu Gly Val Ser Ile Leu Val
 20 25 30
 Leu Ile Leu Val Val Val Leu Ala Val Val Val Pro Arg Trp Arg Gln
 35 40 45
 Gln Trp Ser Gly Pro Gly Thr Thr Lys Arg Phe Pro Glu Thr Val Leu
 50 55 60
 Ala Arg Cys Val Lys Tyr Thr Glu Ile His Pro Glu Met Arg His Val
 65 70 75 80
 Asp Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile Ser Lys
 85 90 95

His Pro Cys Asn Ile Thr Glu Glu Asp Tyr Gln Pro Leu Met Lys Leu
 100 105
 Gly Thr Gln Thr Val Pro Cys Asn Lys Ile Leu Leu Trp Ser Arg Ile
 115 120 125
 Lys Asp Leu Ala His Gln Phe Thr Gln Val Gln Arg Asp Met Phe Thr
 130 135 140
 Leu Glu Asp Thr Leu Leu Gly Tyr Leu Ala Asp Leu Thr Trp Cys
 145 150 155 160
 Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr Gln Ser Cys Pro Asp Trp
 165 170 175
 Arg Lys Asp Cys Ser Asn Asn Pro Val Ser Val Phe Trp Lys Thr Val
 180 185 190
 Ser Arg Arg Phe Ala Glu Ala Ala Cys Asp Val Val His Val Met Leu
 195 200 205
 Asn Gly Ser Arg Ser Lys Ile Phe Asp Lys Asn Ser Thr Phe Gly Ser
 210 215 220
 Val Glu Val His Asn Leu Gln Pro Glu Lys Val Gln Thr Leu Glu Ala
 225 230 235 240
 Trp Val Ile His Gly Gly Arg Glu Asp Ser Arg Asp Leu Cys Gln Asp
 245 250 255
 Pro Thr Ile Lys Glu Leu Glu Ser Ile Ile Ser Lys Arg Asn Ile Gln
 260 265 270
 Phe Ser Cys Lys Asn Ile Tyr Arg Pro Asp Lys Phe Leu Gln Cys Val
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 Lys Asn Pro Glu Asp Ser Ser Cys Thr Ser Glu Ile
 290 295 300

<210> 23
 <211> 1317
 <212> DNA
 <213> Homo sapiens

<400> 23
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<210> 24
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 24						
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<210> 25
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 25		
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		21

<210> 26
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 26		
tcagatctca	gatgtgcaag	atgaatc
		27

<210> 27
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic primer

<400> 27		
ttgtaccag	gtggcgccag	cagtg
		25

<210> 28
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 28
ttggtaccat ggccaactgc gag 23

<210> 29
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 29
ccgatatcag atctcagatg tgcaagatg 29

<210> 30
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic primer

<400> 30
ccgatatcga tctcagatgt gcaagatg 28

<210> 31
<211> 363
<212> DNA
<213> Homo sapiens

<400> 31
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<210> 32
<211> 1500
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide construct

<220>
 <221> CDS
 <222> (307) .. (393)

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gccacc atg aaa cac ctg tgg ttc ttc ctc ctg ctg gtg gca gct ccc 348
      Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro
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Arg Trp Val Leu Ser Gln Val Glu Phe Cys Arg Arg Leu Ala Gln
  15          20          25

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<210> 33
<211> 800
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic nucleotide construct

<220>
<221> CDS
<222> (307)..(705)

<400> 33
tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg 60
actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc 120
aaaatcaacg ggactttcca aaatgtcgta acaactccgc ccattgacg caaatgggcg 180
gtaggcgtgt acggtgggag gtctatataa gcagagctct ctggctaact agagaaccca 240
ctgttactg gcttatcgaa attaatagca ctactatag ggagacccaa gctggctagc 300
gccacc atg gtg ttg cag acc cag gtc ttc att tct ctg ttg ctc tgg 348
Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp
1 5 10
atc tct ggt gcc tac ggg gat atc gtg atg att aaa cgt acg gtg gct 396
Ile Ser Gly Ala Tyr Gly Asp Ile Val Met Ile Lys Arg Thr Val Ala
15 20 25 30
gca cca tct gtc ttc atc ttc ccg cca tct gat gag cag ttg aaa tct 444
Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
35 40 45
gga act gcc tct gtt gtg tgc ctg ctg aat aac ttc tat ccc aga gag 492
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu
50 55 60
gcc aaa gta cag tgg aag gtg gat aac gcc ctc caa tcg ggt aac tcc 540
Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser
65 70 75
cag gag agt gtc aca gag cag gac agc aag gac agc acc tac agc ctc 588
Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu
80 85 90
agc agc acc ctg acg ctg agc aaa gca gac tac gag aaa cac aaa gtc 636
Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val
95 100 105 110
tac gcc tgc gaa gtc acc cat cag ggc ctg agc tcg ccc gtc aca aag 684
Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys
115 120 125
agc ttc aac agg gga gag tgt taggggcccg tttaaaccg ctgatcagcc 735
Ser Phe Asn Arg Gly Glu Cys
130
tcgactgtgc cttctagtgt ccagccatct gttgtttgcc cctccccgt gccttccttg 795
accct 800

<210> 34
 <211> 800
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic nucleotide construct

<220>
 <221> CDS
 <222> (307)..(384)

<220>
 <221> CDS
 <222> (386)..(712)

<400> 34
 tcgctattac catggtgatg cggttttggc agtacatcaa tgggcgtgga tagcggtttg 60
 actcacgggg atttccaagt ctccacccca ttgacgtcaa tgggagtttg ttttggcacc 120
 aaaatcaacg ggactttcca aaatgtcgta acaactccgc cccattgacg caaatgggcg 180
 gtaggcgtgt acgggtggag gtctatataa gcagagctct ctggctaact agagaaccca 240
 ctgcttactg gcttatcgaa attaatacga ctactatag ggagacccaa gctggctagc 300
 gccacc atg gcc tgg gct ctg ctg ctc ctc acc ctc ctc act cag gcc 348
 Met Ala Trp Ala Leu Leu Leu Thr Leu Leu Thr Gln Gly
 1 5 10
 aca gga tcc tgg gct gat atc gtg atg cac gaa gtt a acc gtc cta ggt 397
 Thr Gly Ser Trp Ala Asp Ile Val Met His Glu Val Thr Val Leu Gly
 15 20 25 30
 cag ccc aag gct gcc ccc tcg gtc act ctg ttc ccg ccc tcc tct gag 445
 Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu
 35 40 45
 gag ctt caa gcc aac aag gcc aca ctg gtg tgt ctc ata agt gac ttc 493
 Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe
 50 55 60
 tac ccg gga gcc gtg aca gtg gcc tgg aag gga gat agc agc ccc gtc 541
 Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Gly Asp Ser Ser Pro Val
 65 70 75
 aag gcg gga gtg gag acc acc aca ccc tcc aaa caa agc aac aac aag 589
 Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys
 80 85 90
 tac gcg gcc agc agc tat ctg agc ctg acg cct gag cag tgg aag tcc 637
 Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser
 95 100 105 110
 cac aga agc tac agc tgc cag gtc acg cat gaa ggg agc acc gtg gag 685
 His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu
 115 120 125
 aag aca gtg gcc cct aca gaa tgt tca taggggcccg tttaaacccg 732
 Lys Thr Val Ala Pro Thr Glu Cys Ser

ctgatcagcc tcgactgtgc cttctagttg ccagccatct gttgtttgcc cctccccgt 792
gccttcct 800

<210> 35
<211> 359
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein construct

<400> 35
Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
1 5 10
Val Leu Ser Gln Val Glu Phe Cys Arg Arg Leu Ala Gln Ala Ser Thr
20 25 30
Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
35 40 45
Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
50 55 60
Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
65 70 75 80
Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
85 90 95
Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
100 105 110
Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Lys Val Glu
115 120 125
Pro Lys Ser Cys Asp Lys Thr His Thr Cys Pro Pro Cys Pro Ala Pro
130 135 140
Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys
145 150 155 160
Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val
165 170 175
Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val Asp
180 185 190
Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr
195 200 205
Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp
210 215 220
Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu
225 230 235 240

Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg
 245 250 255
 Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys
 260 265 270
 Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp
 275 280 285
 Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys
 290 295 300
 Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser
 305 310 315 320
 Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser
 325 330 335
 Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser
 340 345 350
 Leu Ser Leu Ser Pro Gly Lys
 355

<210> 36
 <211> 133
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic protein construct

<400> 36
 Met Val Leu Gln Thr Gln Val Phe Ile Ser Leu Leu Leu Trp Ile Ser
 1 5 10 15
 Gly Ala Tyr Gly Asp Ile Val Met Ile Lys Arg Thr Val Ala Ala Pro
 20 25 30
 Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr
 35 40 45
 Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys
 50 55 60
 Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu
 65 70 75 80
 Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser
 85 90 95
 Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr Ala
 100 105 110
 Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe
 115 120 125
 Asn Arg Gly Glu Cys
 130

<210> 37
<211> 135
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
protein construct

<400> 37
Met Ala Trp Ala Leu Leu Leu Thr Leu Leu Thr Gln Gly Thr Gly
1 5 10 15
Ser Trp Ala Asp Ile Val Met His Glu Val Thr Val Leu Gly Gln Pro
20 25 30
Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu
35 40 45
Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro
50 55 60
Gly Ala Val Thr Val Ala Trp Lys Gly Asp Ser Ser Pro Val Lys Ala
65 70 75 80
Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala
85 90 95
Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys Ser His Arg
100 105 110
Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val Glu Lys Thr
115 120 125
Val Ala Pro Thr Glu Cys Ser
130 135

<210> 38
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 38
Val Ser Arg Arg Phe Ala Glu Ala Ala Cys Asp Val Val His Val
1 5 10 15

<210> 39
<211> 15
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 39

Phe Leu Gln Cys Val Lys Asn Pro Glu Asp Ser Ser Cys Thr Ser
1 5 10 15

<210> 40

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 40

Cys Gln Ser Val Trp Asp Ala Phe Lys Gly Ala Phe Ile
1 5 10

<210> 41

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 41

Thr Trp Cys Gly Glu Phe Asn Thr Ser Lys Ile Asn Tyr
1 5 10

<210> 42

<211> 120

<212> PRT

<213> Homo sapiens

<400> 42

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
20 25 30

Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
35 40 45

Ser Ala Ile Ser Gly Ser Gly Gly Ser Thr Tyr Tyr Ala Asp Ser Val
50 55 60

Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95

Ala Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln

	100		105		110
Gly Thr	Leu Val Thr Val Ser Ser				
	115		120		

<210> 43
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 43
 Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly
 1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Leu Leu His Ser
 20 25 30

Asn Gly Tyr Asn Tyr Leu Asp Trp Tyr Leu Gln Lys Pro Gly Gln Ser
 35 40 45

Pro Gln Leu Leu Ile Tyr Leu Gly Ser Asn Arg Ala Ser Gly Val Pro
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Gln Gln His
 85 90 95

Tyr Thr Thr Pro Pro Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg